PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

RM HM
JW

08 DEC 2003

To:

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PCT

WRITTEN OPINION
(PCT Rule 66)

Date of mailing *(day/month/year)*	04.12.2003
Applicant's or agent's file reference P/63610/GPTU18	**REPLY DUE** **within 3 month(s)** from the above date of mailing

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/GB03/01028	11.03.2003	14.03.2002

International Patent Classification (IPC) or both national classification and IPC
H04B10/06

Applicant
MARCONI UK INTELLECTUAL PROPERTY LTD et al

1. This written opinion is the **first** drawn up by this International Preliminary Examining Authority.

2. This opinion contains indications relating to the following items:

I	☒	Basis of the opinion
II	☐	Priority
III	☐	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
IV	☐	Lack of unity of invention
V	☒	Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
VI	☐	Certain documents cited
VII	☐	Certain defects in the international application
VIII	☐	Certain observations on the international application

3. The applicant is hereby **invited to reply** to this opinion.

When? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also: For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis.
For an informal communication with the examiner, see Rule 66.6.

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.

4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 14.07.2004

Name and mailing address of the international preliminary examining authority:

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I. Basis of the opinion

1. With regard to the **elements** of the international application *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed")*:

Description, Pages

1-12 as originally filed

Claims, Numbers

1-19 as originally filed

Drawings, Sheets

1/3-3/3 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

   These elements were available or furnished to this Authority in the following language: , which is:

   - ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
   - ☐ the language of publication of the international application (under Rule 48.3(b)).
   - ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

   - ☐ contained in the international application in written form.
   - ☐ filed together with the international application in computer readable form.
   - ☐ furnished subsequently to this Authority in written form.
   - ☐ furnished subsequently to this Authority in computer readable form.
   - ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
   - ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

   - ☐ the description, pages:
   - ☐ the claims, Nos.:
   - ☐ the drawings, sheets:

5. ☐ This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

6. Additional observations, if necessary:

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1,9
Inventive step (IS)	Claims	
Industrial applicability (IA)	Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1). Citations : D1 : US-A-6 222 660
D2 : US-A-5 953 690
D3 : US-A-6 157 022

2). Attention is directed to D1 which shows a method and apparatus for controlling the bias voltage of an avalanche photodiode (col. 1 lines 5 to 9).
Furthermore, after the optical signal is converted to an electrical signal the error rate of this signal is measured and the bias voltage is adjusted in order to minimise the error rate (col. 3 lines 17 to 21) .

3). Therefore in the light of this disclosure , claims 1 and 9 do not appear to be new , contrary to the requirements of Article 33(2) PCT.

4a). Considering the dependent claims, D1 discloses determining various constant power level curves over which the bit error rate is zero but does not discuss the timing of these measurements.

b). Similarly to D1 , in D2 characteristic data curves are stored in a memory containing information of control functions over a range of operating conditions such as varying temperature and power supply voltage levels. This also involves providing a variable avalanche diode bias voltage to achieve the lowest error rate (col. 19 lines 25 to 37 and col 21 lines 12 to 50).The time interval at which the error rate is measured is set according to efficiency but no indication is given as to determining the tendance of the error rate to be increasing or decreasing and to adjust the time period accordingly.

c). In D3 a method and apparatus is shown for controlling the bias voltage of an avalanche photodiode which compensates for temperature variation (see figures 2 and 3).

d). Therefore in the prior art from the Search Report there does not appear to be a disclosure of determining the increasing or decreasing tendance of the error rate in order to adjust the sample time period accordingly.

e). Thus inclusion of these features from dependent claims 2 and 10 respectively into

the independent claims 1 and 9 could lead to claims that fulfill the requirements of Articles 33(2) and (3) PCT.

5). Concerning the application :

a). Claim 19 lacks clarity (Article 6 PCT) in the phrase "any of claims 11".

b). Figure numeral 29 (error pulses) as discussed in the description page 8 line 13 is missing from Figure 2 .